

U.S. Appln. S.N. 10/522,705
AMENDMENT

PATENT

IN THE DRAWINGS:

Please replace the original sheet of drawings with the
attached replacement sheet of drawings.

REMARKS

This Amendment cancels claim 11, amends claims 1, 2, 4, 5, 7, 9, 10 and 12, amends the specification, and replaces the drawings. The change to the specification corrects an obvious typographical error. The same correction has been made to claim 7. The "under pressure" feature of claims 1 and 2 is supported by the "applied pressure" disclosure in the impregnation step of the Example (Specification, page 18, lines 10 and 18). In claims 1 and 3, the steps I, II and III have been relocated in order to facilitate understanding. In claim 1, "optionally" has been relocated in front of step III, to make even more clear this step is optional. The capillary rise feature of claim 9 is taken from canceled claim 11, while the matrix feature of claim 9 is supported at page 19, lines 12. The remaining changes to claims 1, 7, 10 and 12 eliminate preferred embodiments. The replacement drawing is a better copy of the original drawing. Claims 1-10 and 12 are pending.

This Amendment overcomes the 35 U.S.C. § 112, second paragraph, rejection of claims 1-12. The claims have been rewritten in response to the Examiner's helpful comments. Thus, claim language beginning with "preferably" or "such as" has been deleted from claims 1, 7, 10 and 12. The language "which has no

objectionable effect on the activity of the catalyst" has been deleted from claims 4 and 5, and "W" has been replaced with --Z-- in claim 4. Claim 9 is a product-by-process claim which has definite product limitations. The language "which is a constituent" has been deleted from claim 10. Similarly, the deletion of the preferred fibers in claim 10 moots the objection to "chlorofibres" and "fluorofibres". "It" has been replaced with definite language in claim 12.

It is respectfully submitted the remaining objections to the claim language are without merit:

1. "Right to the core" - One of ordinary skill in the art would understand this phrase to mean the impregnant completely penetrates the textile rather than merely coating the textile surface. See Specification, page 2, lines 9-14, page 15, line 37 to page 16, line 5. See also Fig. 1, page 16, last line to page 17, first line, and page 19, lines 1-12.

2. "Crosslinking by curing in a fan oven for 30 minutes at 150°C" - One of ordinary skill would understand this phrase describes the curing conditions employed when testing a given liquid, crosslinkable silicone composition to determine whether it is suitable for use as an impregnant in the claimed method. See Specification, page 5, lines 14-26.

3. "Being fluid and obtained without recourse either to dilution or to dissolution or to emulsification" - One of ordinary skill would understand this phrase to require the liquid, crosslinkable silicone composition to be fluid, without having been diluted, dissolved or emulsified.

In short, one of ordinary skill in the art would understand the metes and bounds of the claimed method. Reconsideration and withdrawal of the indefiniteness rejection of claims 1-12 are respectfully requested.

The 35 U.S.C. § 103(a) rejection of claims 1-12 over U.S. Patent No. 6,670,418 to Mueller et al. is respectfully traversed. A feature of the claimed method for preparing an architectural silicone membrane is impregnating an architectural textile under pressure with a specified crosslinkable silicone elastomer composition, such that the composition completely penetrates the textile right to its core. The silicone composition must have a dynamic viscosity of between 100 and 7000 mPa.s at 25°C, and must have at least one of three specified mechanical properties after having been crosslinked under specified curing conditions.

A feature of the claimed architectural membrane, which is prepared by the claimed process, is a matrix of crosslinked

silicone elastomer. The claimed membrane has a capillary rise of less than 20 mm when measured according to a T test.

Not all silicone compositions can be used to prepare a architectural silicone membrane having a capillary rise of less than 20 mm. The inventors have discovered how to select a suitable silicone composition using a three-stage selection process:

1. First, select a group of crosslinkable silicone compositions which have the following components:

(a) at least one polyorganosiloxane (POS) having, per molecule, at least two alkenyl groups linked to the silicon;

(b) at least one polyorganosiloxane having, per molecule, at least three hydrogen atoms linked to the silicon;

(c) a catalytically effective quantity of at least one catalyst.

2. Second, select from among the group of crosslinkable silicone compositions having the above-mentioned components, those silicone compositions which have a viscosity of 1000 - 7000 mPa.s at 25°C,

3. Finally, refine the selection by submitting these 1000-7000 mPa.s silicone compositions to a test consisting:

a) in forming samples of 2mm thickness test plaques for measuring tensile strength and samples of 6mm thickness pins for measuring hardness;

b) crosslinking these samples in a fan oven for 30 minutes at 150°C.;

c) selecting the 1000-7000 mPa.s compositions whose corresponding samples have a Shore A hardness of at least 2, a tensile strength of at least 0.5 N.mm⁻¹ and/or an elongation at break of at least 50%. See page 18, example I.5 of the specification. This three stage selection process makes it possible to definitively obtain the claimed architectural membrane using the claimed method.

Mueller et al. fails to raise a prima facie case of obviousness against the claimed method and membrane. Instead, Mueller et al. discloses a silicone composition comprising a reinforcing filler and a non-reinforcing filler (see col. 6, lines 37-41). This silicone composition is used to coat (not impregnate) textile substrates (col. 7, line 30). The presence of these two fillers in high quantities (between 15% (5+10) and 130% (50+80), see claim 1) considerably increases the viscosity of the silicone composition, which is about 128,000 to 140,000 mm²/s (see Table 1, col. 10-11). Mueller et al.'s viscosity range (which is

approximately equal to 128,000 to 140,000 mPa.s) is much greater than the viscosity range of the silicone composition used in the claimed method (between 1000 and 7000 mPa.s. The viscosity of the Mueller et al. compositions does not permit impregnation of an architectural textile material right to its core.

The claimed method produces an architectural membrane having a matrix of crosslinked silicone elastomer, and which has a capillary rise of less than 20 mm. In contrast, Mueller et al. discloses coated substrates i.e. substrates having a continuous film of silicone elastomer on the surface. See claims 10-16 of Mueller et al.

There is no mention or suggestion of a capillary rise maximum in Mueller et al. Indeed, the technical features (viscosity and filler) of the silicone compositions used in Mueller et al. are so different that these compositions cannot be used to make the advantageous architectural membrane of the present invention (being impregnated right to the core and having a capillary rise of less than 20 mm).

Mueller et al. fails to disclose or suggest a method for preparation of an architectural membrane having a capillary rise of less than 20 mm by selecting among three mechanical properties of a crosslinked silicone composition (shore A hardness, tensile

strength and elongation at break) in a preliminary test. Indeed, tensile strength is not measured in Mueller et al.

Mueller et al. seeks to provide cured silicone compositions having improved surface properties such as dry hand, anti-friction, non-abrasive and matt surfaces. See Col. 7, lines 60-67. These surface properties are obtained due to the Mueller et al. silicone elastomer coating, i.e., a surface film. One of ordinary skill in the art is given no suggestion, motivation or apparent reason to modify Mueller et al. by (1) selecting a crosslinkable silicone composition having a significantly lower viscosity than taught by Mueller et al., and (2) impregnating rather than coating an architectural material.

Reconsideration and withdrawal of the obviousness rejection of claims 1-12 are respectfully requested.

It is believed this application is in condition for allowance. Reconsideration and withdrawal of all rejections of claims 1-12, and issuance of a Notice of Allowance directed to claims 1-10 and 12, are earnestly requested. The Examiner is urged to telephone the undersigned should she believe any further action is required for allowance.

The extension of time fee is being paid electronically today. It is not believed any additional fee is required for entry and

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consideration of this Amendment. Nevertheless, the Commissioner is authorized to charge Deposit Account No. 50-1258 in the amount of any such required fee.

Respectfully submitted,

/James C. Lydon/

James C. Lydon
Reg. No. 30,082

Atty. Case No.: **PLAS-030**
100 Daingerfield Road
Suite 100
Alexandria, VA 22314
Telephone: (703) 838-0445
Facsimile: (703) 838-0447

Enclosures:

Petition for Extension of Time
Replacement Drawing Sheet
Supplemental Information Disclosure Statement